Approved For Release 2004/11/30 : CIA-RDP78B04770A000300050004-1

OPTIONAL FORM NO. 1

UNITED STATES GOVERNMENT

Memorandum

TO : NPIC/P&DS

Atten :

DATE: 12 October 1966

FROM : PD/CASB/CSS

SUBJECT:

1. Enclosed is a copy of a Disclosure Data Sheet on an invention in "Membrane Vacuum System for Holding Copy Film in Photographic Contact Printers." Contractor indicates it will not file an application for a patent and cites Patent

2. Will you let us know whether there is sufficient Government interest in the invention to warrant Government patent action.

Distribution:
Orig - Addressee
1 - File
1 - Patent file

OL/PD/CASB/CSS/

Declass Review by NGA.

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October 4, 1966

U.S. Government
Washington, D. C.

Attention: Contracting Officer

STAT Reference:

Dear Sir:

Enclosed are three (3) copies of the following disclosure of invention which comes within the provisions of the subject contract;

STAT

"Membrane Vacuum System For Holding Copy Film In Photographic Contact Printers"

STAT Also enclosed is a copy of NOTICE OF INTENTION NOT TO FILE AN APPLICATION FOR PATENT for the above identified disclosure.

Very truly yours,

STAT Administrator
Government Contract Invention Records
Patent Operations

LJR:fcs

Enclosures: 4

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NOTICE OF INTENTION NOT TO FILE AN APPLICATION FOR PATENT

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TITLE: MEMBRANE VACUUM SYSTEM FOR HOLDING COPY FILM IN PHOTOGRAPHIC CONTACT PRINTERS

GOVERNMENT CONTRACT NO: STAT

1. A novelty search (was) (~~was not~~) made.

2. The best known prior art (or reference of interest):

STAT U.S. Patent

3. Known publication or presentation, intended publication or presentation, or public use of the invention is as follows:

None

4. The invention (is) (~~is not~~) incorporated in equipment built and/or delivered or to be delivered under the contract. Date: Spring 66
The model number is (if known): Not known

5. Other pertinent comments which are believed will be of value to the Government Agency:

None

6. Attached are facsimile copy(ies) of the disclosure papers required by the Government.

7. ALL FUTURE CORRESPONDENCE AND DEALINGS CONCERNING THE ABOVE IDENTIFIED DISCLOSURE MUST BE ADDRESSED TO THE ATTENTION OF

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PATENT DISCLOSURE DATA SHEET

To: Patent Operations

[redacted]

The herein described invention is submitted pursuant to my employment agreement.

1. Date of this disclosure: Aug 9, 1966
2. DESCRIPTIVE TITLE: Membrane Vacuum [illegible] for holding [illegible] in photographic contact printing
3. PURPOSE, SUMMARY AND PROBABLE USES: To provide uniform pressure between transparency and copy film in contact printers and more specifically in contact printers using modulated light for exposing the copy film.

Answer All Questions – Use N/A when Not Applicable – **Submit Original – Keep Copy for Your Files**

4. Attached hereto is "Detailed Description" comprising Form Pat. 3010 (4) pages and the following papers, prints samples, etc. photographs of vacuum system mounted on optical bench
5. Invention described May 23, 1966 in Engineering Notebook No. 21668 Pages 91-92-97
6. Device constructed on May 2, 1966 7. Shop Order # 22405
8. Teste [redacted] STAT
10. State [redacted]
11. If this invention has been described in any publication or report, identify: Final Report 217 project
12. Was invention *either* (a) conceived or (b) *first* actually reduced to practice in the course of or under Government Contract(s) or Subcontract(s)? (a) Yes ✓ No ____ If "Yes," give date: ____, 19__ (b) Yes ✓ No ____ If "Yes," give date: ____, 19__ (See explanation on reverse side)
13. If answer either to 12(a) or 12(b) is "Yes" list contract(s) or subcontract(s) numbers: (a) [redacted] STAT
14. Is the invention embodied in any material either (a) furnished or (b) to be furnished under Government Contract(s) or Subcontract(s) ? (a) Yes ____ No ✓ (b) Yes ____ No ____
15. If answer either to 14(a) or 14(b) is "Yes" list contract(s) or subcontract(s) numbers: (a) ____ (b) ____
16. Security classification of the Invention Not classified STAT
(If any part of this disclosure is classified, the disclosure should be appropriately stamped and transmitted under security procedures.)
17. (1) Full Nar[illegible]

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STAT [redacted]

Occupat[illegible]

or (2) Full Nar[illegible]

Home A[illegible]

STAT [redacted]

Occupat[illegible]

18. Sign full name(s)

(An[illegible]

19. The invention wa[illegible] is understood by

STAT Signature of Witness

Name of Witness (Ty[illegible]

Location: City &[illegible]

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Form Pat. 3010 3-60

Approved For Release 2004/11/30 : CIA-RDP78B04770A000300050004-1

PAGE 1

PATENT DISCLOSURE DATA SHEET

DESCRIPTIVE TITLE: Membrane vacuum system for holding copy film in contact printer.

3. DETAILED DESCRIPTION: This disclosure describes a system for holding the transparency and copy film together for contact printing, and more specifically a system where light is required to pass through both the transparency and copy film for sensing purposes.

Such a system was needed on the E.P.T. project which included a modulated light contact printer. Here, light from a flying spot scanner (sensing kinescope) was focussed on the transparency to be printed, the variations of light intensity passed through the copy film to a multiplier phototube, and the corresponding voltage variations modulated a second kinescope which was optically focussed and registered with the transparency itself. The modulated light from the second kinescope was of the correct color and brightness to properly expose the copy film. Thus, a positive or negative picture of the transparency itself, could be used as the light source for exposing the copy film. An optical filter prevented the light from the second kinescope from reaching the multiplier phototube and causing system oscillation.

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PATENT DISCLOSURE DATA SHEET

DESCRIPTIVE TITLE: Membrane vacuum system for holding copy film in contact printer.

3. DETAILED DESCRIPTION:

"Pressure" systems for holding the transparency and copy film together were tried. They consisted of transparent air bags and soft pads of transparent plastic material. They were discarded in favor of the membrane vacuum system to be described.

During the early part of the contract when the iron resolution process was in use there was a need for more uniform contact between the transparency and the copy film for better contact printing. At that time the films were pressed between pieces of twin ground plate glass. This resulted in a loss of resolution due to the contact printing process, itself.

The system described herein consists of a thin, transparent membrane of mylar, or equivalent, stretched on an O-ring and a means for evacuating the space between the O-ring and a piece of twin ground plate glass. Please refer to Fig 1. The O-ring, which is mounted on the multiplex phototube head, is positioned opposite the piece of glass on which is mounted the transparency and copy film. On making contact of the O-ring and glass and evacuating the

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Inventor(s)

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Aug 9, 1966

Date

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PAGE 4

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PATENT DISCLOSURE DATA SHEET

DESCRIPTIVE TITLE: Membrane vacuum system for holding copy film in contact printing

3. DETAILED DESCRIPTION: the space between them, the membrane is pressed tightly against the copy film, the copy film against the transparency, and the transparency against the glass. Since the atmosphere pressure is uniform on the membrane and the air has been removed under it, the contact pressure is fairly uniform over the area of the transparency.

With this vacuum system the smallest group could be resolved on the test pattern after contact printing, that is, 228 cycles per mm. The test pattern used was the USAF 1951 with Resolving Power Target having 6 Progression but only to and including Group no. 7.

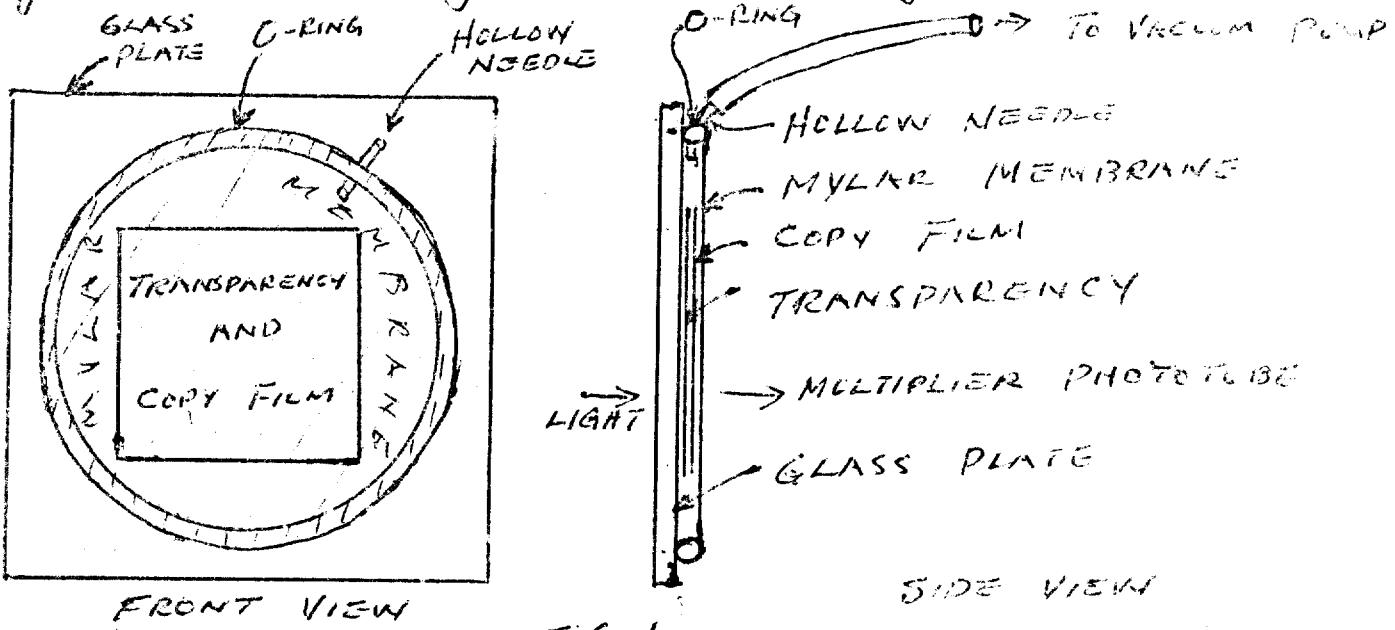

FIG. 1

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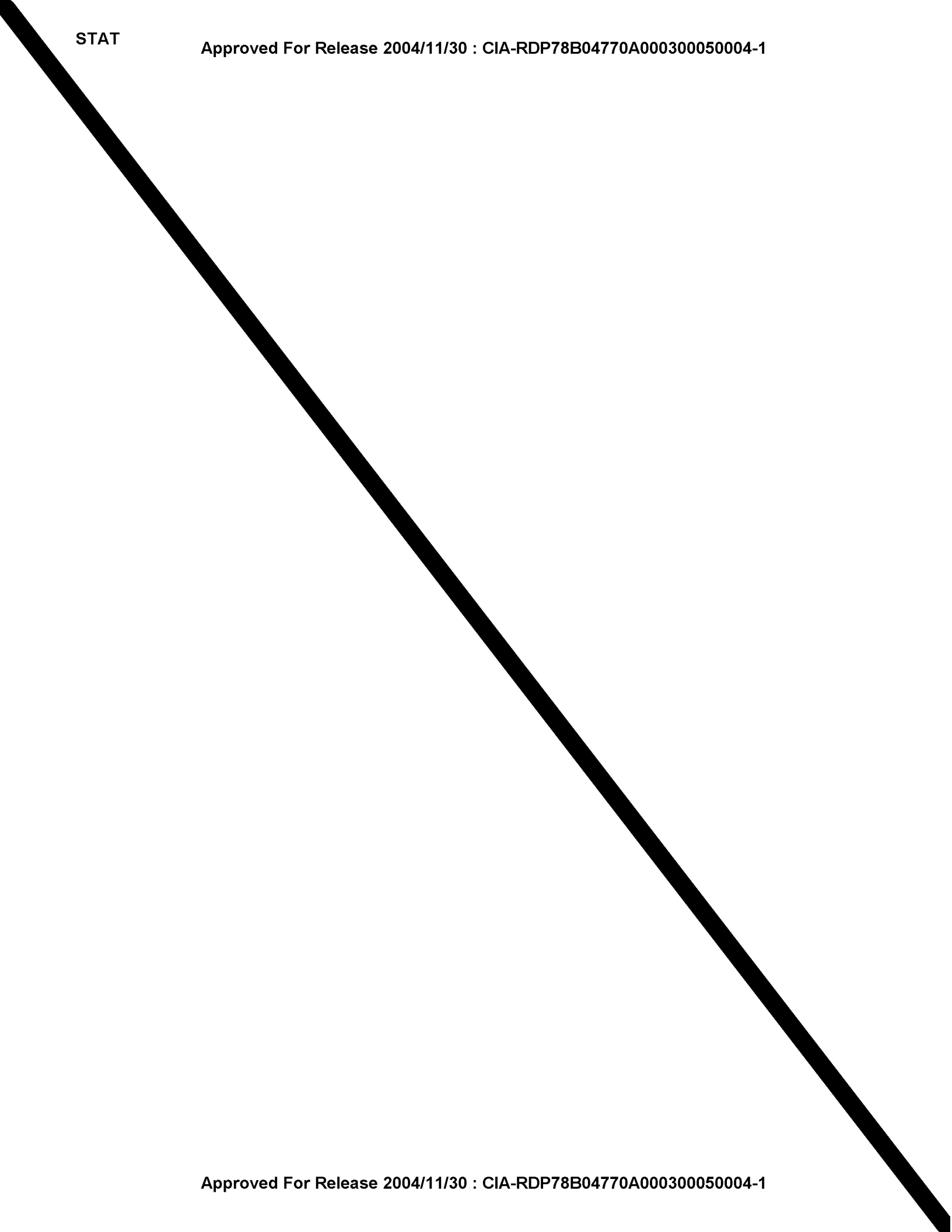

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PATENT DISCLOSURE DATA SHEET

To: Patent Operations

The herein described invention is submitted pursuant to my employment agreement.

1. Date of this disclosure: Aug 9, 1966
2. DESCRIPTIVE TITLE: Methods Vacuum system for holding copy film in photographic contact printers.
3. PURPOSE, SUMMARY AND PROBABLE USES: To provide uniform pressure between transparency and copy film in contact printers and more specifically in contact printers using modulated light for exposing the copy films.

Answer All Questions – Use N/A when Not Applicable – **Submit Original** – **Keep Copy for Your Files**

4. Attached hereto is "Detailed Description" comprising Form Pat. 3010 (4) pages and the following papers, prints, samples, etc. photograph of vacuum system installed on NPL bed.
5. Invention described May 23, 1966 in Engineering Notebook No. 21,060 Pages 91-92-93
6. Device constructed on May 2, 1966 7. Shop Order # 27445
8. Tested on May 2, 1966 9. Test Witnessed by [redacted]
   Bldg 3 Flr. B City and State Princeton NJ
10. State any plans for use of the invention May be of interest to [redacted]
11. If this invention has been described in any publication or report, identify: Final Report ERT project
12. Was invention *either* (a) conceived or (b) *first* actually reduced to practice in the course of or under Government Contract(s) or Subcontract(s)? (a) Yes ✓ No ____ If "Yes," give date: ____, 19____.
    (b) Yes ✓ No ____ If "Yes," give date: ____, 19____. **(See explanation on reverse side)**
13. If answer either to 12(a) or 12(b) is "Yes" list contract(s) or subcontract(s) numbers:
    (a) [redacted]
14. Is the invention embodied in any material either (a) furnished or (b) to be furnished under Government Contract(s) or Subcontract(s) ? (a) Yes ____ No ✓ (b) Yes ____ No ____
15. If answer either to 14(a) or 14(b) is "Yes" list contract(s) or subcontract(s) numbers:
    (a) ____ (b) ____
16. Security classification of the Invention Not classified
    (If any part of this disclosure is classified, the disclosure should be appropriately stamped and [illegible]
17. (1) Full Name [redacted]
    Home Addr
    Occupation
    or (2) Full Name
    Home Addr
    Occupation No. ____ Occupation Title ____
18. Sign full name(s) (1) ____ (2) ____

SPACE BELOW RESERVED FOR WITNESS

(An effort should be made to obtain the signature of the person to whom the inventor(s) first disclosed the invention)

19. The invention was first explained to me by the above identified inventor(s) on ____, 19____, and is understood by me
    Signature of Witness
    Name of Witness (Ty

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Form Pat. 3010 3-60

Approved For Release 2004/11/30 : CIA-RDP78B04770A000300050004-1

PAGE 2

PATENT DISCLOSURE DATA SHEET

DESCRIPTIVE TITLE: Membrane vacuum system for holding copy film in contact printing.

3. DETAILED DESCRIPTION: This disclosure describes a system for holding the transparency and copy film together for contact printing, and more specifically a system where light is required to pass through both the transparency and copy film for sensing purposes.

Such a system was needed on the E.P.T. Project which included a modulated light contact printer. Here, light from a flying spot scanner (sensing kinescope) was focussed on the transparency to be printed, the variations of light intensity passed through the copy film to a multiplier phototube, and the corresponding voltage variations modulated a second kinescope which was optically focussed and registered with the transparency itself. The modulated light from the second kinescope was of the correct color and lightness to properly expose the copy film. Thus, a positive or negative picture of the transparency, itself, could be used as the light source for exposing the copy film. An optical filter prevented the light from the second kinescope from reaching the multiplier phototube and causing system oscillation.

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PATENT DISCLOSURE DATA SHEET

DESCRIPTIVE TITLE: Membrane vacuum system for holding ~~Copy film in contact printer~~.

3. DETAILED DESCRIPTION:

"Pressure" systems for holding the transparency and copy film together were tried. They consisted of transparent air bags and soft pads of transparent silastic material. They were discarded in favor of the membrane vacuum system to be described.

During the early part of the contact when the low resolution processor was in use there was a need for more uniform contact between the transparency and the copy film for better contact printing. At that time the films were pressed between pieces of twin ground plate glass. This resulted in a loss of resolution due to the contact printing process, itself.

The system described herein consists of a thin, transparent membrane of mylar, or equivalent, stretched on an O-ring and a means for evacuating the space between the O-ring and a piece of twin ground plate glass. Please refer to Fig 1. The O-ring, which is mounted on the multiphen phototube head, is positioned opposite the piece of glass on which is mounted the transparency and copy film. On making contact of the O-ring and glass and evacuating the STAT

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Inventor(s)

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Aug 9, 1966

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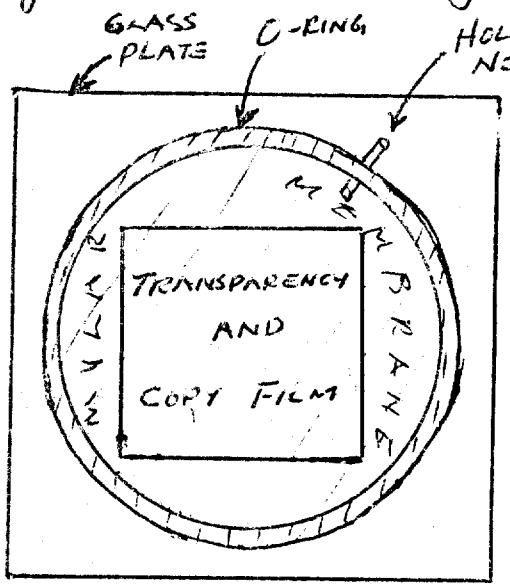
PATENT DISCLOSURE DATA SHEET

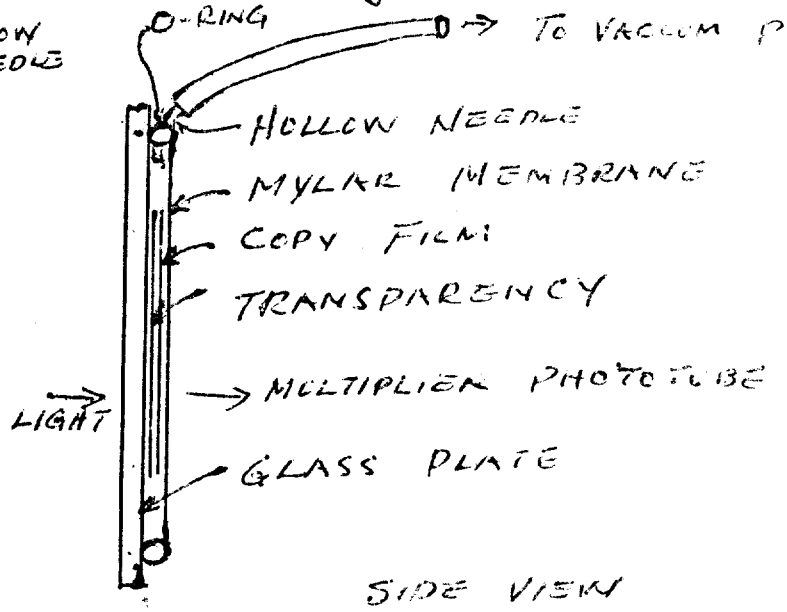
DESCRIPTIVE TITLE: Membrane vacuum system for holding copy film in contact printing

3. DETAILED DESCRIPTION: the space between them. The membrane is pressed tightly against the copy film, the copy film against the transparency, and the transparency against the glass. Since the atmospheric pressure is uniform on the membrane and the air has been removed under it, the contact pressure is fairly uniform over the area of the transparency.

With this vacuum system the smallest group could be resolved on the test pattern after contact printing, that is, 228 cycles per mm. The test pattern used was the USAF 1951 with Resolving Power Target having 6 Progression but only to and including Group no. 7.



FRONT VIEW



SIDE VIEW

FIG. 1

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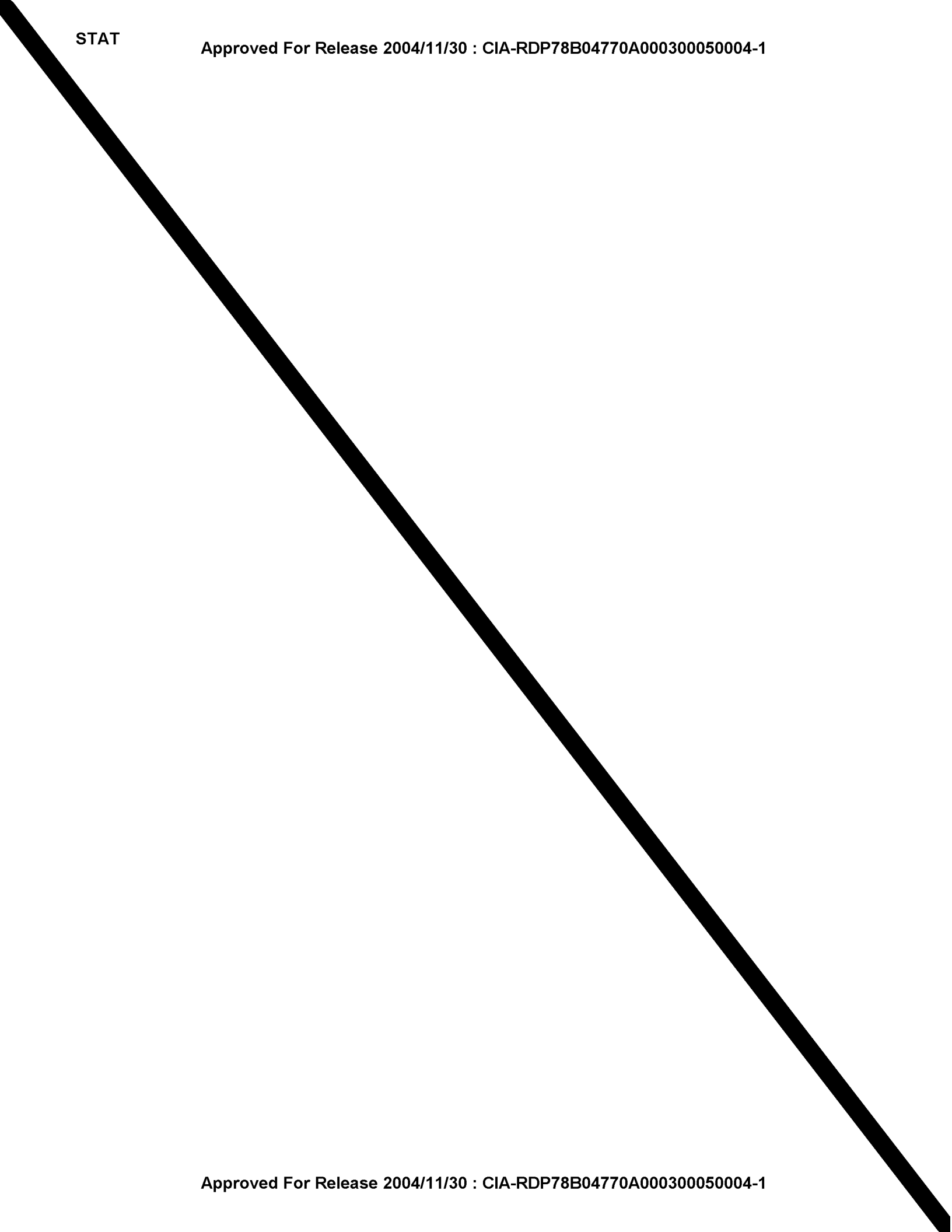

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PATENT DISCLOSURE DATA SHEET

To: Patent Operations

The herein described invention is submitted pursuant to my employment agreement.

1. Date of this disclosure: Aug 9, 1966
2. DESCRIPTIVE TITLE: Method and Vacuum System for Holding Copy Film in Photographic Contact Printers.
3. PURPOSE, SUMMARY AND PROBABLE USES: To provide uniform pressure between transparency and copy film in contact printers and more specifically in contact printers using modulated light for exposing the copy film.

Answer All Questions — Use N/A when Not Applicable — **Submit Original** — **Keep Copy for Your Files**

4. Attached hereto is "Detailed Description" comprising Form Pat. 3010 (4) pages and the following papers, prints, samples, etc. photographs of vacuum system installed on NPIC breadboard.
5. Invention described May 25, 1966 in Engineering Notebook No. 21060 Pages 91-92-93
6. Device constructed on May 2, 1966 7. Shop Order # 27445
8. Tested on May 2, 1966 9. Test Witnessed by [redacted]
10. State any plans for use of the invention may be of interest to [redacted]
11. If this invention has been described in any publication or report, identify: Final Report E17 project
12. Was invention *either* (a) conceived or (b) *first* actually reduced to practice in the course of or under Government Contract(s) or Subcontract(s)? (a) Yes ✓ No ____ If "Yes," give date: _____, 19____. (b) Yes ✓ No ____ If "Yes," give date: _____, 19____. **(See explanation on reverse side)**
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15. If answer either to 14(a) or 14(b) is "Yes" list contract(s) or subcontract(s) numbers: (a) _____ (b) _____
16. Security classification of the Invention Not classified

(If any part of this disclosure is classified, the disclosure should be appropriately stamped and

17. (1) Full Name

TYPE or PRINT

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(2) Full Name

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18. Sign full name(s)

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19. The invention was is understood by m

Signature of Witness

Name of Witness (Type

[redacted]

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Form Pat. 3010 3-60

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PAGE 1

PATENT DISCLOSURE DATA SHEET

DESCRIPTIVE TITLE: Membrane vacuum system for holding copy film in contact printing.

3. DETAILED DESCRIPTION: This disclosure describes a system for holding the transparency and copy film together for contact printing, and more specifically a system where light is required to pass through both the transparency and copy film for sensing purposes.

Such a system was needed on the E.P.T. project which included a modulated light contact printer. Here, light from a flying spot scanner (sensing kinescope) was focussed on the transparency to be printed, the variations of light intensity passed through the copy film to a multiplier phototube, and the corresponding voltage variations modulated a second kinescope which was optically focussed and registered with the transparency itself. The modulated light from the second kinescope was of the correct color and brightness to properly expose the copy film. Thus, a positive or negative picture of the transparency, itself, could be used as the light source for exposing the copy film. An optical filter prevented the light from the second kinescope from reaching the multiplier phototube and causing system oscillation.

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During the early part of the contract when the low resolution processor was in use there was a need for more uniform contact between the transparency and the copy film for better contact printing. At that time the films were pressed between pieces of twin ground plate glass. This resulted in a loss of resolution due to the contact printing process, itself.

The system described herein consists of a thin, transparent membrane of mylar, or equivalent, stretched on an O-ring and a means for evacuating the space between the O-ring and a piece of twin ground plate glass. Please refer to Fig 1. The O-ring, which is mounted on the multiplier phototube head, is positioned opposite the piece of glass on which is mounted the transparency and copy film. On making contact of the O-ring and glass and evacuating the

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Inventor(s)

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PAGE 4

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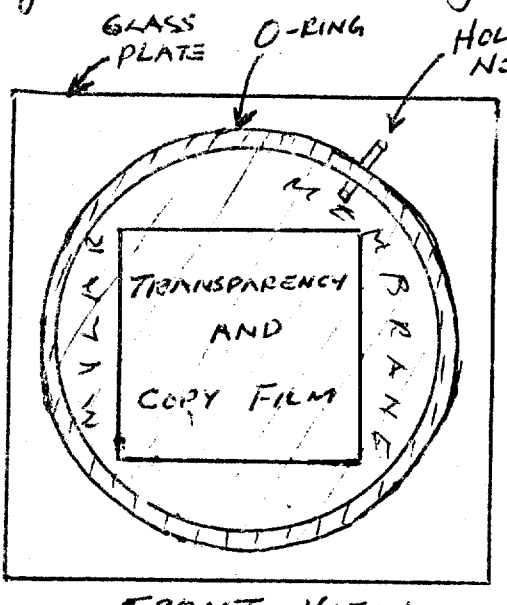
PATENT DISCLOSURE DATA SHEET

DESCRIPTIVE TITLE: Membrane vacuum system for holding copy film in contact printing

3. DETAILED DESCRIPTION: the space between them the membrane is pressed tightly against the copy film, the copy film against the transparency, and the transparency against the glass. Since the atmosphere pressure is uniform on the membrane and the air has been removed under it, the contact pressure is fairly uniform over the area of the transparency.

With this vacuum system the smallest group could be resolved on the test pattern after contact printing, that is, 228 cycles per mm. The test pattern used was the USAF 1951 with Resolving Power Target having 6 Progression but only to and including Group no. 7.



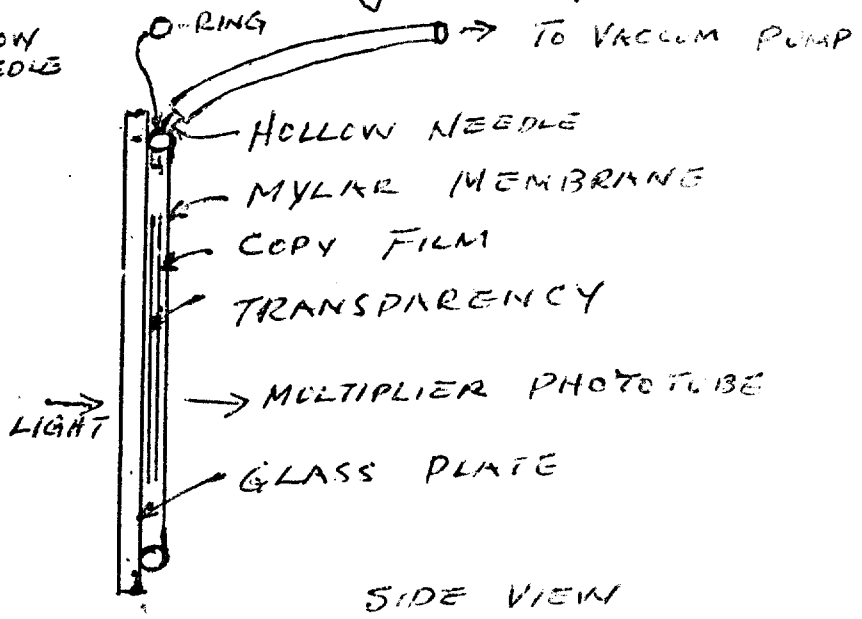


FIG. 1

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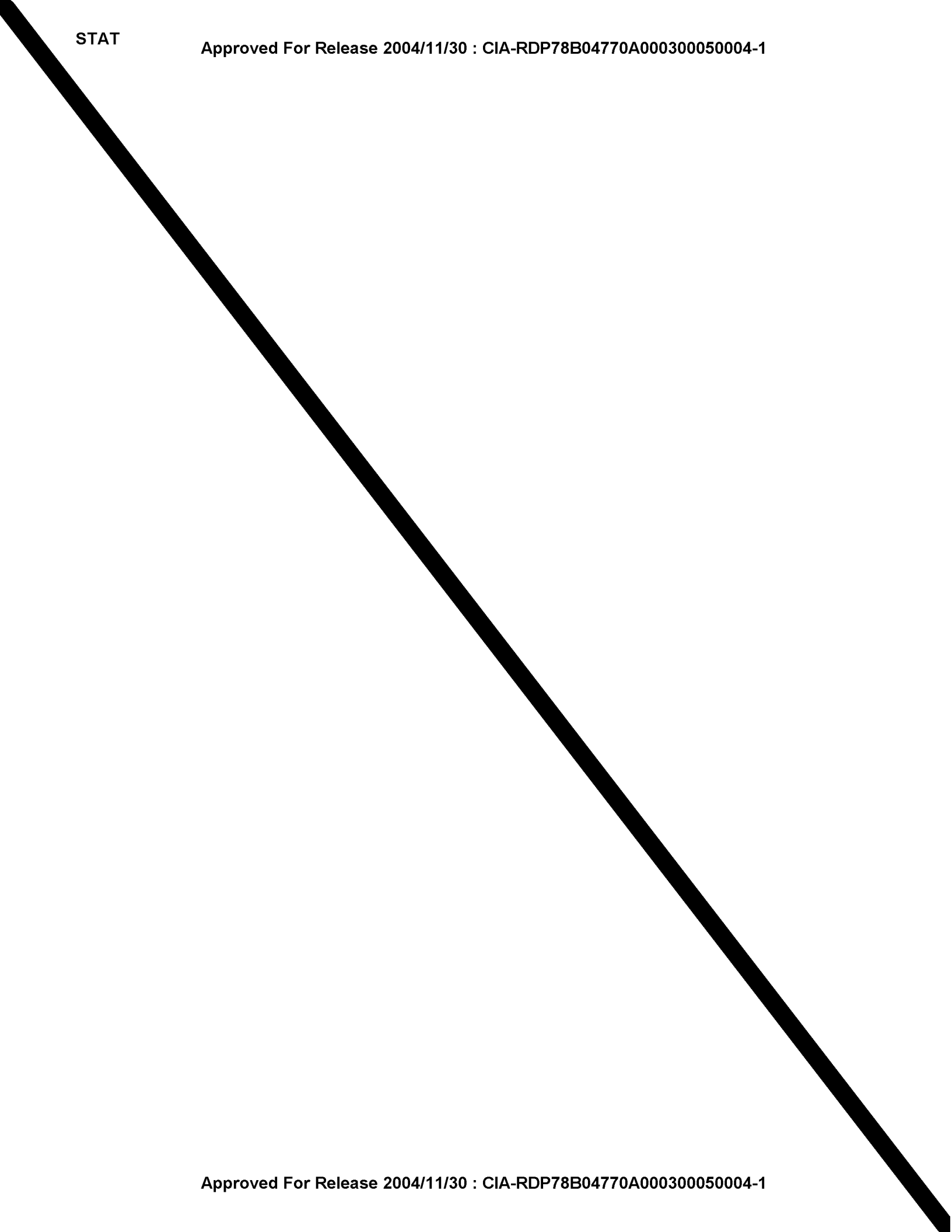

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3,066,592 Dec 4, 1962
Class 95 subclass 76

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